



Basic VBA

MGMI 311

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Subroutine

- Also called macros or procedures
- Syntax :

Sub subname()
statement

End Sub

- i.e. every subroutine must start with the **Sub** line, and it must end with the **End Sub** line.



Declaring Variables

- Syntax:
Dim variableName **As** dataType
- Data type
 - String
 - Integer
 - Long
 - Boolean
 - Double
 - etc.



Declaring Variables

- Example: **Dim** i **As** String
 Dim unitCost **As** Double
 Dim i,j,k **As** Integer
- Variable declaration can be placed anywhere within a sub, but it is usually placed after the Sub line
 i.e. **Sub** Test()
 Dim n **As** Integer
 Other statements
 End Sub



Assign value to Variable

- After declare a variable, you can simply assign value to variable using “=”
- Example

```
Dim i,j,k As Integer
```

```
i=10
```

```
j = 20
```

```
k = i+j
```



Other Declaration

Declaring Object Variable

- Variable that points to an object.

Example : **Dim** testRange **As** Range

Declaring Constant

- Variable → value can be changed
- Constant → value cannot be changed

Example : **Const** intRate = 0.10

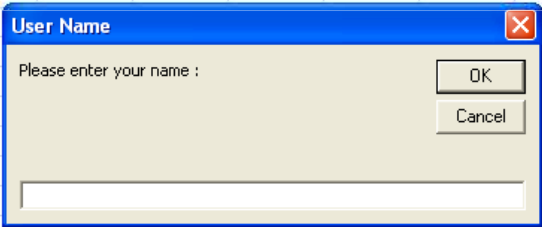


Input Box

- To get inputs from users
- Example

```
name = InputBox ("Please Enter your name.",  
                "Title")
```

Note: Title = name of the input box





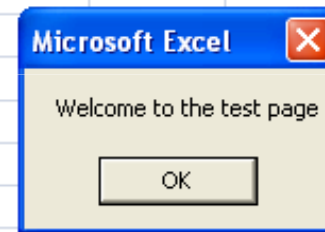
Message Box

- To output/display value/message to users
- Example

`msgBox ("message.", "Title")`

Note: Title = name of the message box

Message Box





Message Box with Yes/No Button

- `variableName = MsgBox("Question?", vbYesNo, "Title")`
- Example
`result = MsgBox("Do you want to continue?",
vbYesNo, "Chance to quit")`

Note : -

- `vbYesNo` 2 buttons: Yes , No
- `vbYesNoCancel` 3 buttons: Yes, No, Cancel
- `vbOKOnly` 1 button: OK
- `vbOKCancel` 2 button: OK, Cancel



Input Box and Message Box

- Take input from the user and display that input on screen
- Example

MsgBox **InputBox**("message","Title"),
vbInformation,"Title"

Note: parentheses are required when the result is captured in a variable or used in some way



Comments

- Any statement after the ' symbol will be treated as a comment in VBA
- Example
Dim n **As** Integer 'declare variable n as Integer



Strings

- A simple text, surrounded by double quotes (“....”)
- Most of Input to **InputBox** and **MsgBox** → String
- The symbol **&** is used for concatenate string
- Example

```
Dim a, b As String
```

```
a = “Name”
```

```
b = “Surname”
```

```
Msgbox “My name is” & a
```

```
Msgbox “My full name is” & a & b & “.”
```



Using String Function

- Excel String Functions can be used in VBA immediately
- Excel String Function
 - Left
 - Right
 - Mid
 - Len
 - Find



Exercise 1

- Ask user to input order's details
 - Customer's name
 - Product's name
 - Quantity to orderand output order confirm message
- Input appointment booking details and output appointment received message



Specifying Objects & Properties

- Objects : Cells, Range
- Assign value

Cells(row, column).Value = _____

Range("firstCell:lastCell").Value = _____

- Example

Cells(1,1).Value = 1

➔ Number 1 is shown in cell A1

Range("A1:B10").Value = 1

➔ Number 1 is shown in the range A1-B10



If condition

- Syntax

If Condition **Then**

Statement1

Else

Statement2

End If

- Example

If $n > 10$ **Then**

$n = n + 1$

Else

$n = n - 1$

End If



Exercise 2

- Ask the user to input any number
 - Check if the number is positive number, show pop-up window confirm the number input
 - Otherwise, ask the user to re-enter the number
- Confirm number only if half of that number is greater 10, otherwise re-enter the number



Assignment

Check data input to the Membership Application Form

Example

- Ask the user to input their name
- Check if the username is shorter than 20 character, show pop-up window and ask for re-enter user name
- Otherwise, pop-up “Welcome(user name)...” window and ask if they want to continue filling-in your application form

